OM243 / OM263 Permanent Outdoor Microphone

Features:

- Optimized for 0° and 90° incidence to meet IEC 61672-1
- Delivered with Individual calibration data
- Built-in electric heater can make the microphone working under low temperature and high humidity environment
- The serial port can control the actuator and read out the temperature and humidity
- IP55 enclosure to against wind, rain, snow, dust and perching birds
- The protection kit can be quickly removed for calibration
- Built-in electrostatic actuator and signal source for remote system check
- ICCP power supply, low self-generated noise, typical noise level is ~17 dBA
- It can be installed on the tripod by 1/4-inch thread on the bottom

Applications:

- Aircraft and airport noise measurement
- Urban, traffic and industrial noise measurement
- Acoustic measurement in severe weathers

Introduction

OM243/OM263 permanent outdoor microphone is developed by BSWA Tech for outdoor noise monitor. Compared with semi-permanent outdoor microphone, the main improvement of permanent outdoor microphone is the built-in electrostatic actuator which can be used for remote system check. The internal signal source can be controlled by serial communication to generate actuating signals with 5 frequencies (250 Hz, 500 Hz, 1 kHz, 2 kHz and 4 kHz) and sound pressure level of 90 dB.

In order to avoid frequent acoustic calibration of outdoor microphone, electrostatic actuator can be used for whole system check including microphone, cable and measuring instrument. When the sensitivity and frequency response of the microphone change enough to affect the measurement, the microphone is no longer suitable for noise measurement, and it should be calibrated by sound signal or even replaced.

OM243/OM263 uses the electrostatic actuator method to apply the known alternating electrostatic force to the metal diaphragm of the condenser microphone through the electrode to push the metal diaphragm to vibrate for calibration. It can also be used to monitor the change of sensitivity. However, electrostatic actuator cannot replace acoustic calibration, and periodic sound calibration is still necessary.

The frequency response of **OM243** is optimized for 0° incidence, primarily for aircraft and airport noise measurement. The **OM263** is optimized for 90° incidence, primarily for urban, traffic and industrial noise measurement. Both of two types of microphones have been specially designed to achieve the free-field frequency response in specified direction of incidence within the limits of IEC 61672-1. Each microphone is supplied with an individual calibration certificate that contains the actual sensitivity and free-field frequency response data for the complete set of outdoor microphones. Users can use the calibration data to correct the measurement data for more accurate results.

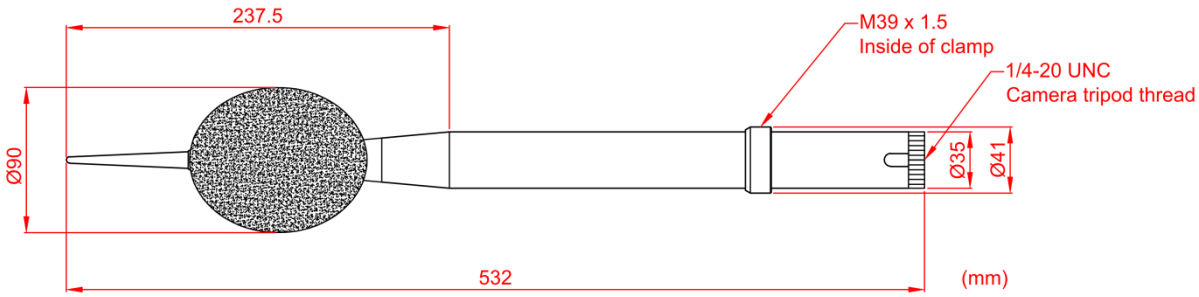
OM243/OM263 meets the IP55 ingress protection rating. The windscreen, internal rain hood and dust mesh can fully protect microphone to against wind, rain, snow, dust and other severe weathers. Built-in electric heater can automatically work in low temperature and high humidity environment to avoid exceeding the working temperature range of microphone and prevent condensation. The bird spike prevents impact of perching birds to the measurement.

Specifications

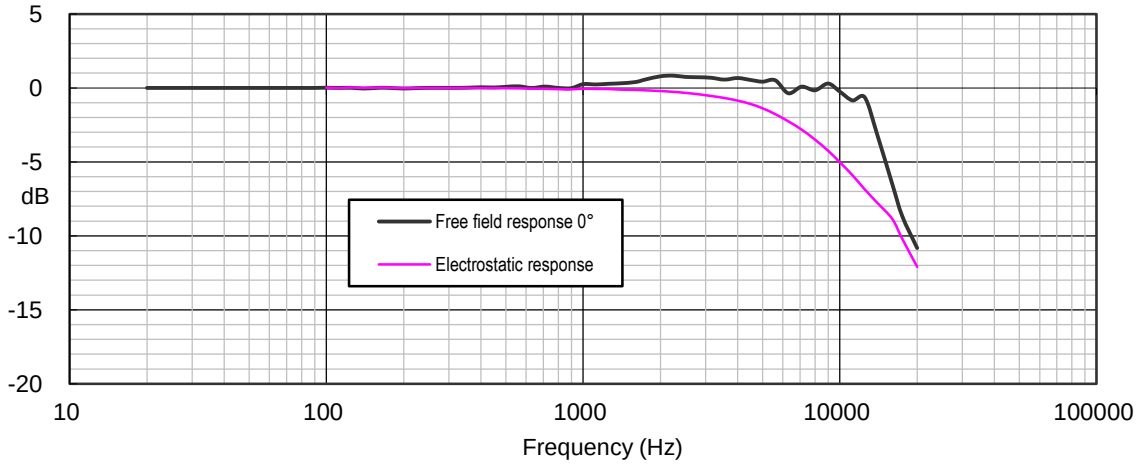
Type	OM243	OM263
Application	Aircraft and airport noise	Urban, traffic and industrial noise
Incidence	0°	90°
Standard	GB/T 3785.1-2010 Class 1, IEC 61672-1:2013 Class 1, ANSI S1.4-1983 Type 1	
Built-in Microphone	1/2” Prepolarized Microphone	
Sound Field	Free-field	
Sensitivity	40 mV/Pa (-28 dB re 1V/Pa)	
Polarization Voltage	0 V (Prepolarized)	
Frequency Response	10 Hz~20 kHz (According to IEC 61672-1）	
Dynamic Range	17 dBA~134 dBA	
Self-generated Noise	17 dBA	
Maximum SPL	≥ 134 dB (3 % distortion)	
Peak SPL	137 dBA	
Electrostatic Actuator	Built-in electrostatic actuator and signal source can generate signal of 90 dBSPL @ 250 Hz, 500 Hz, 1 kHz, 2 kHz and 4 kHz	
Wind Noise Attenuation	20 dBA (wind speed 10 m/s)	
Output Impedance	<30 Ω	
Max. Output Voltage	±7.1 Vpeak	
Power Supply	Wide range DC power supply: 12 V~32 V	
Output Connector	9-pin waterproof socket: SF1212/S9	
TEDS	Optional, IEEE 1451.4 compliant (default v0.9, optional v1.0)	
Mounting Thread	1/4” thread	
Enclosure	IP55 (Microphone vertical placement only)	
Electric Heater	DC heater, power consumption: 4 W	
Temperature and Humidity Sensor	Measure the surface temperature of the preamplifier, tolerance: temperature ±0.3 °C, humidity ±3 %RH	
Temperature Range	-30 °C ~ 80 °C	
Humidity Range	0 %RH ~ 95 %RH	
Dimensions (mm)	Ø90 x 432 (without support rod), Ø90 x 532 (with support rod)	
Weight	392 g (without support rod), 488 g (with support rod)	

Product Structure

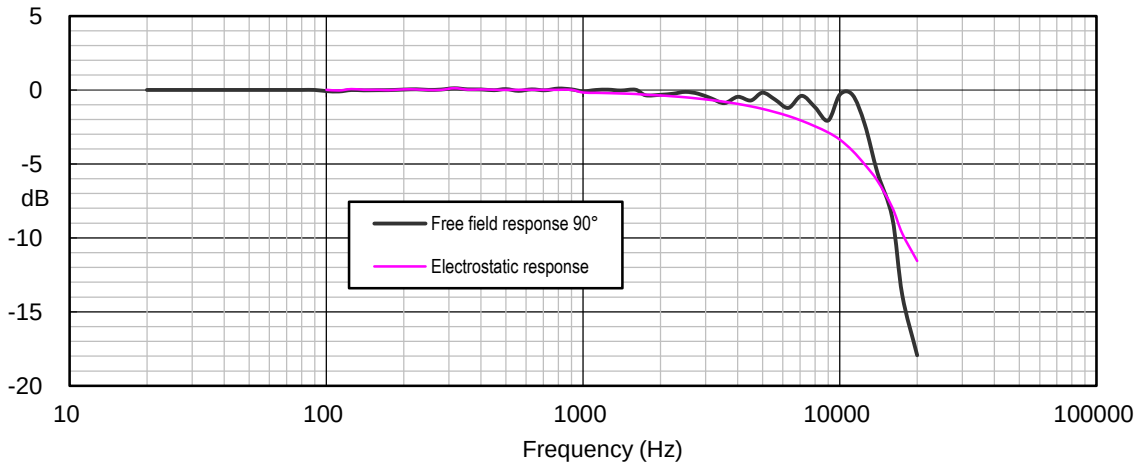
Dimensions



OM243 Free-filed Frequency Response 0°



OM263 Free-filed Frequency Response 90°



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